





PTO/SB/08B (08-03)

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>Third Supplemental<br>(use as many sheets as necessary) |   | Application Number       | 10/028,631     |                        |         |
|   |   | Filing Date              | 12/21/2001     |                        |         |
|   |   | First Named Inventor     | Howarth et al. |                        |         |
|   |   | Group Art Unit           | 1616           |                        |         |
|   |   | Examiner Name            | Neil S. Levy   |                        |         |
| Sheet   | 1 | of                       | 2              | Attorney Docket Number | SU-7245 |

| NON PATENT LITERATURE DOCUMENTS |                          |   |                |
|---------------------------------|--------------------------|---|----------------|
| Examiner<br>Initials*           | Cite<br>No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>2</sup> |
|                                 | L-2                      | Blaser, Martin J., et al., "Inactivation of <i>Campylobacter jejuni</i> by Chlorine and Monochloramine", Applied and Environmental Microbiology, vol 51, no. 2, 1988, ppg 307-311.  |                |
|                                 | L-3                      | Carr, Anitra C., "Differential reactivities of hypochlorous and hypobromous acids with purified Escherichia coli phospholipid: formation of haloamines and haloaldehydes", Biochimica et Biophysica, 1392, 1998, ppg 254-264.                                   |                |
|                                 | L-4                      | Dickens, J.A., et al., "Efficacy of an Herbal Extract on the Microbiological Quality of Broiler During a Simulated Chill", Poultry Science, 2000, vol 79, ppg 1200-1203.  |                |
|                                 | L-5                      | Fabrizio, K.A., et al., "Comparison of Electrolyzed Oxidizing Water with Various Antimicrobial Interventions to Reduce Salmonella Species on Poultry", Poultry Science, 2002, vol 81, ppg 1598-1605.  |                |
|                                 | L-6                      | Hawkins, Clare L., et al., "Hypochlorite- and Hypobromite-Mediated Radical Formation and Its Role in Cell Lysis", Archives of Biochemistry and Biophysics, vol 395, no. 2, November 15, 2001, ppg 137-145.  |                |
|                                 | L-7                      | Kumar, Krishan, et al., "Kinetics and Mechanism of General-Acid-Assisted Oxidation of Bromide by Hypochlorite and Hypochlorous Acid", Inorg. Chem., 1987, vol 26, ppg 2706-2711.  |                |
|                                 | L-8                      | Lillard, H.S., "Effect of Trisodium Phosphate on Salmonellae Attached to Chicken Skin", Journal of Food Protection, vol 57, no. 6, June 1994, ppg 465-469.  |                |
|                                 | L-9                      | Mead, G.C., et al., "The Effectiveness of In-plant Chlorination in Poultry Processing", Br. Poult. Sci., vol 16, 1975, ppg 517-526.   |                |
|                                 | L-10                     | Northcutt, J.K., et al., "Effect of Broiler Age, Feed Withdrawal, and Transportation on Levels of Coliforms, Campylobacter, Escherichia coli and Salmonella on Carcasses Before and After", Poultry Science, 2003, vol 82,                                      |                |
|                                 | L-11                     | Patterson, J.T., "Chlorination of Water Used For Poultry Processing", British Poultry Science, vol 9, part 2, 1968, ppg 129-133.  |                |
|                                 | L-12                     | Selk, S.H. et al., "Comparative Antimicrobial Activity, In Vitro and In Vivo, of Soft N-Chloramine Systems and Chlorhexidine", Applied and Environmental Microbiology, Apr. 1982, pp 899-904.   |                |

|                       |  |                    |          |
|-----------------------|--|--------------------|----------|
| Examiner<br>Signature |  | Date<br>Considered | 11/08/05 |
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|   |   | Examiner Name            | Neil S. Levy   |
|   |   | Attorney Docket Number   | SU-7245        |
| Sheet   | 2 | of                       | 2              |

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| M                               | L-13                  | Tamblyn, K.C., et al., "Utilization of the Skin Attachment Model to Determine the Antibacterial Efficacy of Potential Carcass Treatments", Poultry Science, 1997, vol 78, ppg 1318-1323.  |                |
|                                 | L-14                  | Tsai, Lee-Shin, et al., "Chlorination of Poultry Chiller Water: Chlorine Demand and Disinfection Efficiency", Poultry Science, 1992, vol 71, ppg 188-196  |                |
|                                 | L-15                  | "Pathogen Reduction; Hazard Analysis and Critical Control Point (HACCP) Systems; Final Rule", Federal Register, July 25, 1996, vol 61, no 144, pg 38806-38814 and 38854-38855.  |                |
|                                 | L-16                  | Vissers, Margret C.M., et al., "Comparison of human red cell lysis by hypochlorous and hypobromous acids: Insights into the mechanism of lysis", Biochem. J., vol 330, 1998, ppg 131-138.   |                |
|                                 | L-17                  | Vissers, Margret C.M., et al., "Fatty acid chlorohydrins and bromohydrins are cytotoxic to human endothelial cells", Redox Report, vol 6, no. 1, 2001, ppg 49-55.   |                |
|                                 | L-18                  | Wabeck, Charles J., "Methods to Reduce Microorganisms on Poultry", Broiler Industry, December 1994, ppg 34, 36, 38, 40, 42.   |                |
|                                 | L-19                  | Yang, Hong, et al., "Survival and Death of Salmonella Typhimurium and Campylobacter jejuni in Processing Water and on Chicken Skin during Poultry Scalding and Chilling", Journal of Food Protection, vol 64, no 6, 2001, ppg 770-                              |                |
|                                 | L-20                  | "9215 C. Spread Plate Method", Microbiological Examination (9000), ppg 9-38 - 9-40.   |                |
|                                 |                       |   |                |
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| Examiner Signature |  | Date Considered | 1/08/02 |
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Fourth Supplemental  
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Sheet

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|                        |              |
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| Art Unit               | 1616         |
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**U.S. PATENT DOCUMENTS**

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|--------------------|-----------------------|--|--------------------------------|--|---|
| M                  | US-2                  | US-2130805   | 09-20-1938                     | Levine   |   |
|                    | US-3                  | US-2392505   | 01-08-1948                     | Rogers   |   |
|                    | US-4                  | US-2398598   | 04-18-1948                     | Rogers   |   |
|                    | US-5                  | US-2779784   | 01-28-1956                     | Paterson   |   |
|                    | US-6                  | US-2795556   | 06-11-1957                     | Quinn  |   |
|                    | US-7                  | US-2888787   | 01-13-1959                     | Paterson   |   |
|                    | US-8                  | US-2920987   | 01-12-1960                     | Wolf et al.  |   |
|                    | US-9                  | US-2971959   | 02-14-1961                     | Waugh et al.                                       |   |
|                    | US-10                 | US-2971960   | 02-14-1961                     | Waugh et al.                                       |   |
|                    | US-11                 | US-3121715   | 02-18-1964                     | Waugh et al.                                       |   |
|                    | US-12                 | US-3147219   | 09-01-1964                     | Paterson   |   |
|                    | US-13                 | US-3147259   | 09-01-1964                     | Paterson   |   |
|                    | US-14                 | US-3345371   | 10-03-1967                     | Paterson   |   |
|                    | US-15                 | US-3412021   | 11-19-1968                     | Paterson   |   |
|                    | US-16                 | US-3826972   | 12-14-1971                     | Lorenzen   |   |
|                    | US-17                 | US-4078099   | 03-07-1978                     | Mazzola  |   |
|                    | US-18                 | US-4119535   | 10-10-1978                     | White et al.                                       |   |
|                    | US-19                 | US-4126717   | 11-21-1978                     | Mazzola  |   |
|                    | US-20                 | US-4136052   | 01-23-1979                     | Mazzola  |   |
|                    | US-21                 | US-4199001   | 04-22-1980                     | Kratz  |   |
|                    | US-22                 | US-4242216   | 12-30-1980                     | Daugherty et al.                                   |   |
|                    | US-23                 | US-4270585   | 08-02-1981                     | King, Sr.  |   |

**FOREIGN PATENT DOCUMENTS**

| Examiner Initials* | Cite No. <sup>1</sup> | Foreign Patent Document<br>Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known) | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines,<br>Where Relevant Passages<br>or Relevant Figures Appear | 1* |
|--------------------|-----------------------|--|--------------------------------|--|---|----|
| M                  | FP-5                  | CA - 1230825   | 12-29-1987                     | Bristol-Myers Co.                                  |   |    |
|                    | FP-6                  | CA - 2042430   | 11-30-1991                     | Eltech Systems Corp.                               |   |    |
|                    | FP-7                  | CA - 2163596   | 09-04-1996                     | S.C. Johnson & Son, Inc.                           |   |    |
|                    | FP-8                  | EP - 0106563   | 04-25-1984                     | Rohm and Haas                                      |   |    |
|                    | FP-9                  | EP - 0177645   | 04-18-1988                     | Glyco Inc.   |   |    |
|                    | FP-10                 | EP - 0206725   | 12-30-1988                     | Jeyes Group Limited                                |   |    |
|                    | FP-11                 | EP - 0228593   | 07-15-1987                     | Chesebrough-Pond's Inc.                            |   |    |
|                    | FP-12                 | EP - 0581826   | 02-09-1994                     | Jeyes Limited                                      |   |    |
|                    | FP-13                 | GB - 1054243   | 01-04-1967                     | Wallace Cameron & Co.                              |   |    |
|                    | FP-14                 | GB - 1600289   | 10-14-1981                     | Fisons Limited                                     |   |    |
|                    | FP-15                 | GB - 2273106   | 08-08-1994                     | Jeyes Group PLC                                    |   |    |
|                    | FP-16                 | JP - 56158333  | 12-07-1981                     | Teijin Ltd.  |   | X  |
|                    | FP-17                 | JP - 7299468   | 11-14-1995                     | Hakuto Co., Ltd.                                   |   | X  |

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|                       |                       | Number-Kind Code <sup>2</sup> (if known) |                                |  |   |
| M                     | US-24                 | US-4293425                               | 10-06-1981                     | Price  |   |
|                       | US-25                 | US-4327151                               | 04-27-1982                     | Mazzola  |   |
|                       | US-26                 | US-4331174                               | 05-25-1982                     | King, Sr.  |   |
|                       | US-27                 | US-4382789                               | 05-10-1983                     | Davis et al.                                       |   |
|                       | US-28                 | US-4427692                               | 01-24-1984                     | Girard   |   |
|                       | US-29                 | US-4451376                               | 05-29-1984                     | Sharp  |   |
|                       | US-30                 | US-4465839                               | 08-14-1984                     | Schulte et al.                                     |   |
|                       | US-31                 | US-4532330                               | 07-30-1985                     | Cole   |   |
|                       | US-32                 | US-4534963                               | 08-13-1985                     | Gordon   |   |
|                       | US-33                 | US-4537697                               | 08-27-1985                     | Girard   |   |
|                       | US-34                 | US-4580766                               | 12-24-1985                     | Girard et al.                                      |   |
|                       | US-35                 | US-4571333                               | 02-18-1986                     | Hsiao et al.                                       |   |
|                       | US-36                 | US-4597841                               | 07-01-1986                     | Bottom et al.                                      |   |
|                       | US-37                 | US-4621098                               | 11-04-1986                     | Cole   |   |
|                       | US-38                 | US-4654424                               | 03-31-1987                     | Girard et al.                                      |   |
|                       | US-39                 | US-4659359                               | 04-21-1987                     | Lorenz et al.                                      |   |
|                       | US-40                 | US-4682387                               | 05-05-1987                     | King, Sr.  |   |
|                       | US-41                 | US-4677130                               | 06-30-1987                     | Puzig  |   |
|                       | US-42                 | US-4692335                               | 09-08-1987                     | Iwanski  |   |
|                       | US-43                 | US-4698165                               | 10-06-1987                     | Theyson  |   |
|                       | US-44                 | US-4713079                               | 12-15-1987                     | Chun et al.  |   |
|                       | US-45                 | US-4728453                               | 03-01-1988                     | Choy   |   |
|                       | US-46                 | US-4745189                               | 05-17-1988                     | Lee et al.   |   |
|                       | US-47                 | US-4780197                               | 10-25-1988                     | Schuman  |   |
|                       | US-48                 | US-4803079                               | 02-07-1989                     | Hsiao et al.                                       |   |
|                       | US-49                 | US-4867895                               | 09-19-1989                     | Choy   |   |
|                       | US-50                 | US-4919841                               | 04-24-1990                     | Kamel et al.                                       |   |
|                       | US-51                 | US-4925866                               | 05-15-1990                     | Smith  |   |
|                       | US-52                 | US-4964892                               | 10-23-1990                     | Hsu  |   |
|                       | US-53                 | US-5076315                               | 12-31-1991                     | King   |   |
|                       | US-54                 | US-5137563                               | 08-11-1992                     | Valkanias  |   |
| US-55                 | US-5218883            | 08-15-1993                               | Kino                           |  |   |

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|                          |                       | Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known) |                                |  |   |
| M                        | FP-18                 | WO 8802987  | 05-05-1988                     | Great Lakes Chemical Corp.                         |   |
|                          | FP-19                 | WO 8910696  | 11-18-1989                     | Great Lakes Chemical Corp.                         |   |
|                          | FP-20                 | WO 9630491  | 10-03-1996                     | Jeyes Group PLC                                    |   |
|                          | FR-21                 | WO 9715652  | 05-01-1997                     | The Clorox Co.                                     |   |
|                          | FP-22                 | WO 9720548  | 08-12-1997                     | The Procter & Gamble Co.                           |   |

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**INFORMATION DISCLOSURE  
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SEP 27 2004

Fourth Supplemental

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Sheet

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of

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|                    | US-56                 | US-5338481                                    | 08-18-1994                     | Jones  |   |
|                    | US-57                 | US-5339889                                    | 08-23-1994                     | Bigham   |   |
|                    | US-58                 | US-5384102                                    | 01-24-1995                     | Ferguson et al.                                    |   |
|                    | US-59                 | US-5403813                                    | 04-04-1995                     | Licht et al.                                       |   |
|                    | US-60                 | US-5409711                                    | 04-25-1995                     | Mapelli et al.                                     |   |
|                    | US-61                 | US-5422126                                    | 06-06-1995                     | Howarth et al.                                     |   |
|                    | US-62                 | US-5478116                                    | 12-19-1995                     | Price et al.                                       |   |
|                    | US-63                 | US-5565108                                    | 10-15-1996                     | Sweeny   |   |
|                    | US-64                 | US-5565576                                    | 10-15-1996                     | Hall et al.  |   |
|                    | US-65                 | US-5578559                                    | 11-26-1996                     | Dolan et al.                                       |   |
|                    | US-66                 | US-5591892                                    | 01-07-1997                     | Jones et al.                                       |   |
|                    | US-67                 | US-5603941                                    | 02-18-1997                     | Farina et al.                                      |   |
|                    | US-68                 | US-5610126                                    | 03-11-1997                     | Barford et al.                                     |   |
|                    | US-69                 | US-5614528                                    | 03-25-1997                     | Jones et al.                                       |   |
|                    | US-70                 | US-5670451                                    | 09-23-1997                     | Jones et al.                                       |   |
|                    | US-71                 | US-5750081                                    | 05-12-1998                     | Farina et al.                                      |   |
|                    | US-72                 | US-5753802                                    | 05-19-1998                     | Hung et al.  |   |
|                    | US-73                 | US-5756440                                    | 05-26-1998                     | Watanabe et al.                                    |   |
|                    | US-74                 | US-5763376                                    | 06-09-1998                     | Ward et al.  |   |
|                    | US-75                 | US-5780841                                    | 07-14-1998                     | Yerushalmi et al.                                  |   |
|                    | US-76                 | US-5859060                                    | 01-12-1999                     | Platt  |   |
|                    | US-77                 | US-5942153                                    | 08-24-1999                     | Heydel   |   |
|                    | US-78                 | US-5958853                                    | 09-28-1999                     | Watanabe   |   |
|                    | US-79                 | US-5972864                                    | 10-26-1999                     | Counts   |   |
|                    | US-80                 | US-5981481                                    | 11-09-1999                     | Counts et al.                                      |   |
|                    | US-81                 | US-5984994                                    | 11-16-1999                     | Hudson   |   |
|                    | US-82                 | US-6284144                                    | 09-04-2001                     | Itzhak   |   |
|                    | US-83                 | US-6448410                                    | 09-10-2002                     | Howarth et al.                                     |   |
|                    | US-84                 | US-6495688                                    | 12-17-2002                     | Howarth  |   |
|                    | US-85                 | US-6508954                                    | 01-21-2003                     | Einagar et al.                                     |   |
|                    | US-86                 | US-6565888                                    | 05-20-2003                     | Howarth et al.                                     |   |
|                    | US-87                 | US-6638959                                    | 10-28-2003                     | Howarth et al.                                     |   |
|                    | US-88                 | US-6680070                                    | 01-20-2004                     | Howarth et al.                                     |   |

**FOREIGN PATENT DOCUMENTS**

| Examiner Initials* | Cite No. <sup>1</sup> | Foreign Patent Document   | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines,<br>Where Relevant Passages<br>or Relevant Figures Appear | T <sup>6</sup> |
|--------------------|-----------------------|---|--------------------------------|--|---|----------------|
|                    |                       | Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known) |                                |  |   |                |
|                    | FP-23                 | WO 9720909  | 08-12-1997                     | The Procter & Gamble Co.                           |   |                |
|                    | FP-24                 | WO 9743264  | 11-20-1997                     | Great Lakes Chemical Corp.                         |   |                |
|                    | FP-25                 | WO 9743392  | 11-20-1997                     | The Procter & Gamble Co.                           |   |                |
|                    | FP-26                 | WO 0034188  | 08-15-2000                     | Stellar Technology Co.                             |   |                |
|                    | FP-27                 | WO 0153209  | 07-26-2001                     | Albemarle Corp.                                    |   |                |

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| <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b><br>Fourth Supplemental<br>(use as many sheets as necessary)<br>SEP 27 2004<br>Sheet 4 of 5 |  | Application Number       | 10/028,631   |
|   |  | Filing Date              | 12/21/2001   |
|   |  | First Named Inventor     | Howarth      |
|   |  | Group Art Unit           | 1616         |
|   |  | Examiner Name            | Neil S. Levy |
|   |  | Attorney Docket Number   | SL-7245      |

| NON PATENT LITERATURE DOCUMENTS  |   |   |                |
|--|---|---|----------------|
| Examiner Initials <sup>2</sup>   | Cite No. <sup>1</sup>   | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.   | T <sup>2</sup> |
|  | L-20  | Corral et al., "Substitution in the Hydantoin Ring. III. Halogenation", J. Org. Chem., 1963, Vol. 28, ppg. 1100-1104.   |                |
|  | L-21  | Jolles, "General Methods of Bromination", Bromine and its Compounds, 1966, Ernest Benn, London, ppg. 365.   |                |
|  | L-22  | Markish et al., "New Aspects on the Preparation of 1,3-Dibromo-5,5-Dimethylhydantoin", Ind. Eng. Chem. Res. 1995, Vol. 34, ppg. 2125-2127.  |                |
|  | L-23  | Orazi et al., "Halogenacion con 3-Bromo-5,5-Dimetil-Hidantoina", Anales Assoc. Quim. Argentina, 1949, Vol. 37, ppg. 192-196. (Not translated)   |                |
|  | L-24  | Orazi et al., "Halogenacion Con 1-3-Dibromo-5,5-Dimetil-Hidantoina", Anales Assoc. Quim. Argentina, 1950, Vol. 38, ppg. 5-11. (Not translated)  |                |
|  | L-25  | Gottardi: Reaction of Cl Br - In Aqueous solution (76 Zeitralks. Bakteriell., Parasiteukd., ) In Infektionskr. Hyg., Abt. I; Orig., Geihe B 162 (3-4), ppg 384-388.   |                |
|  | L-26  | March, "Advanced Organic Chem.", 1992, 4 <sup>th</sup> Edition, ppg. 639-640.   |                |
|  | L-27  | HCAPLUS Abstract of JP 07171576 A2 issued 1995.   |                |
|  | L-28  | HCAPLUS Abstract of JP 07277912 A2 issued 1995.   |                |
|  | L-29  | HCAPLUS Abstract of JP 08027119 A2 issued 1996.   |                |
|  | L-30  | Chowhan et al., "Hardness Increase Induced by Partial Moisture Loss in Compressed Tablets and Its Effect on In Vitro Dissolution", J. Pharm. Sciences, October 1978, Vol. 67, No. 10, ppg. 1385-1389.   |                |
|  | L-31  | Krycer et al., "An Evaluation of Tablet Binding Agents Part II. Pressure Binders", Powder Technology, 1983, Vol. 34, ppg. 53-56.  |                |
|  | L-32  | Petterson, "N-Halogen Compounds. I. Decomposition of 1,3-Dichloro-5,5-dimethylhydantoin in Water at pH 9", J. Org. Chem., 1959, Vol. 24, ppg. 1414-1419.  |                |
|  | L-33  | HCAPLUS Abstract of JP 08239699 A2 issued 1996.   |                |
|  | L-34  | HCAPLUS Abstract of JP 09087684 A2 issued 1997.   |                |
|  | L-35  | HCAPLUS Abstract of JP 09227317 A2 issued 1997.   |                |
|  | L-36  | Hayward America's #1 Pool Water Systems Product Catalog, "Automatic Chemical Feeders" "Chlorinators (Slow Dissolve Tri-Chlor-Only) and Brominators, Hayward Pool Products Inc. Website, < <a href="http://www.haywardnet.com/products/catalog/displayProdInfo.cfm?itemID=61">http://www.haywardnet.com/products/catalog/displayProdInfo.cfm?itemID=61</a> >, 2 pages. |                |
| L-37   | Author unknown, "Big Brother Brominator - Brominators", Bulky Systems Website, < <a href="http://www.bulkysystemsinc.com/brominator.htm">http://www.bulkysystemsinc.com/brominator.htm</a> > (Visited August 10, 2001), 1 page. |   |                |

|                    |   |                 |         |
|--------------------|---|-----------------|---------|
| Examiner Signature |  | Date Considered | 1/08/02 |
|--------------------|---|-----------------|---------|

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# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

 SEP 27 2004  
 Fourth Supplemental  
 (use as many sheets as necessary)

Sheet 5 of 5

|                         |              |
|-------------------------|--------------|
| Application Number      | 10/028,631   |
| Filing Date             | 12/21/2001   |
| First Name and Inventor | Howarth      |
| Group Art Unit          | 1616         |
| Examiner Name           | Neil S. Levy |
| Attorney Docket         | SU-7245      |

## NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.                         | T <sup>2</sup> |
|--------------------|-----------------------|---|----------------|
| M                  | L-38                  | Hayward Pool Products Owner's Guide, Installation and Operating Instructions, "Hayward Chemical Feeder", Models C250CF, C500CF, C1100CF, C1800CF, C2400CF, - 1998 - 4 pages   |                |
|                    | L-39                  | Hayward America's #1 Pool Water Systems Product Catalog, "Automatic Chemical Feeders" "Chlorinators (Slow Dissolve Tri-Chlor Only) and Brominators, Buyers Guide, Hayward Pool Products Inc., Website, <http://www.haywardnet.com/products/catalog/displayProdInfo.cfm?itemID=60>, 2 pg |                |
|                    | L-40                  | Pentair Pool Products Brochure, "Rainbow High Capacity Chlorine/Bromine Feeders", "Unsurpassed Performance From The Industry's Leader in Automatic Sanitizing of Large Residential and Commercial Pools", date unknown, 1 page.   |                |
|                    | L-41                  | Pentair Pool Products Brochure, "Rainbow Model 300 Automatic Chlorine/Bromine Off-line Feeders", "The Efficient, Easy Way to Sanitize Your Pool or Spa", date unknown, 1 page.  |                |
|                    | L-42                  | Pentair Pool Products Brochure, "Rainbow Model 320 Automatic Chlorine/Bromine In-line Feeder", "Saves Time, Reduces Manual Handling of Chemicals", date unknown, 7 pages.   |                |
|                    | L-43                  | Sani-King Perform-Max Pool Sanitizer Instruction Guide, Models 940, 940, & 980 (In-line) and Models 930 & 960 (Off-line), date unknown, 16 pages.   |                |
| M                  | L-44                  | Sani-King Spa Feeder Product Brochure Model 740 from King Technology Website, <http://www.kingtechnology.com/spafeeder.htm> (Visited August 10, 2001), 2000, 4 pages.   |                |
| M                  | L-45                  | Sani-King Adjust-A-Flo Product Brochure from King Technology Website <http://www.kingtechnology.com/spafeeder.htm> (Visited August 10, 2001), 2000, 1 page.   |                |
| M                  | L-46                  | Sani-King Perform-Max Sanitizers for Inground Pools Product Brochure for Model 940 & 960 from King Technology Website, <http://www.kingtechnology.com/performaxIG.htm>, visited August 10, 2001, 2000, 1 page   |                |
|                    | L-47                  | Sani-King Perform-Max Sanitizers for Above Ground Pools Product Brochure Model 910 & 930 from King Technology Website, <http://www.kingtechnology.com/performaxAG.htm>, visited August 10, 2001, 2000, 1 page   |                |
|                    | L-48                  | Discount Pool & Spa Supplies, Automatic Chlorinators and Chemical Feeders Website, <http://www.discountpoolsupplies.com/Chemfeeders> Visited August 10, 2001, 3 pages.  |                |
| M                  | L-49                  | Sorun - Fundamentals of General Chemistry, p. 315, 1955.  |                |
| M                  | L-50                  | AJ Zahran, S.M., "Utilization of Polyethylene and Paraffin Waxes as Controlled Delivery Systems for Different Fertilizers", Ind. Eng. Chem. Res., 2000, vol 39, pp 369-371.   |                |

|                    |                     |                 |         |
|--------------------|---------------------|-----------------|---------|
| Examiner Signature | <i>Neil S. Levy</i> | Date Considered | 1/08/02 |
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